

Notice of Allowability

Application No.

10/023,665

Examiner

Roberts Culbert

Applicant(s)

HIROKI ET AL.

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1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 6/2/04.
2. ☒ The allowed claim(s) is/are 1,2,4-6 and 8.
3. ☒ The drawings filed on 21 December 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

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EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Douglas Pinsky on 7/16/04.

The application has been amended as follows:

Amend Claim 4(renumbered as Claim 3) to depend on Claim 1.

Amend Claim 8(renumbered as Claim 6) to depend on Claim 5(renumbered as Claim 4).

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/2/04 has been entered.

Allowable Subject Matter

Claims 1, 2, 4-6, and 8 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art of record fails to teach or render obvious a method for manufacturing a liquid ejecting head, in which liquid flow paths are defined by combining an element substrate having a plurality of discharge energy generating elements for applying discharge energy to liquid with a nozzle member having a plurality of liquid discharge nozzle grooves and an opening communicating with said nozzle grooves, comprising the steps of: preparing at least one material common to said element substrate having a first surface of <110> crystal face orientation as a base material of said nozzle member; forming etching mask layers on said first surface of the base material of said nozzle member for forming said

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nozzle grooves and on a second surface opposite to said first surface, respectively; before patterning said mask layer on said first surface of the base material; forming a recessed portion corresponding to said opening in said second surface of the base material by patterning said mask layer on said second surface of the base material and by effecting etching in said second surface via said mask layer of said second surface; and after forming said recessed portion, forming said nozzle grooves and said opening in the base material for communicating said recessed portion with said nozzle grooves, by patterning said mask layer on said first surface of the base material and by effecting etching in said first surface and said recessed portion via said mask layer of said first surface and said mask layer of said second surface.

Similarly, the prior art of record fails to teach or render obvious a method for manufacturing a liquid ejecting head in which liquid flow paths are defined by combining an element substrate having a plurality of discharge energy generating elements for applying discharge energy to liquid with a nozzle member having a plurality of liquid discharge nozzle grooves and a liquid chamber communicating with said nozzle grooves and an opening communicating with said liquid chamber, comprising the steps of: preparing at least one material common to said element substrate having a first surface of <110> crystal face orientation as a base material of said nozzle member; forming etching mask layers on said first surface of the base material of said nozzle member for forming said nozzle grooves and said liquid chamber and on a second surface opposite to said first surface, respectively; before patterning said mask layer on said first surface of the base material; forming a recessed portion corresponding to said opening in said second surface of the base material by patterning said mask layer on said second surface of the base material and by effecting etching in said second surface via said mask layer of said second surface; and after forming said recessed portion, forming said nozzle grooves, said liquid chamber, and said opening in the base material for communicating said recessed portion with said liquid chamber, by patterning said mask layer on said first surface of the base material and by effecting etching in said first surface and said recessed portion via said mask layer of said first surface and said mask layer of said second surface.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

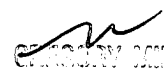
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (571) 272-1433. The examiner can normally be reached on Monday-Friday (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. Culbert



GREGORY MILLS
SUPERVISORY PATENT EXAMINER
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